## What Is Claimed Is:

| 1 /1. A device for accurate | y generating a pluratity | of samples representing | data encoded |
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- 2 according to a digital subscriber line (DSL) specification, said data being encoded in a DSL
- 3 signal and being received on a telephone line, said telephone line being shared by other devices
- 4 used for home networking, said device comprising:
- a filter coupled to said telephone line, said filter receiving an input signal on said
- 6 telephone line and attenuating signal components corresponding to said home networking to
- 7 generate a filtered output;
  - a first amplifier amplifying said filtered output to generate an amplified signal; and
  - an analog to digital converter (ADC) sampling said amplified signal to generate said
  - plurality of samples.
    - 2. The device of claim 1, wherein said filter comprises:
  - a high pass filter filtering any DSL transmission echos received on said telephone line,
  - said high pass filter further filtering any voice communications also received on said telephone
- 4 line;

- a second amplifier amplifying the output of said high pass filter; and
- a low pass filter filtering attenuating the signal components corresponding to said home
- 7 networking to a level less than a desired noise floor in an environment based on said DSL.
- 3. The device of claim 2, wherein said high pass filter further attenuates high frequency
- 2 components including said signal components corresponding to said home networking, wherein

Patent

Page 18 of 23

Docket No.: TI-31194/TXN-0001

- 3 the attenuations of said high frequency components enables said second amplifier to be
- 4 implemented with a higher gain.
- 4. The device of claim 3, wherein said DSL comprises Asymmetric DSL (ADSL), and
- 2 said home networking is performed according to home phone networking alliance (HPNA)
- 3 standard, wherein said desired noise floor equals -150 dBM/Hz.
  - 5. The device of claim 3, wherein said high pass filter comprises a first resistor in series with an input capacitance, wherein said first resistor has a resistance substantially more than the internal resistance of said input capacitance, wherein said first resistor causes said attenuations of said high frequency components.
  - 6. The device of claim 5, further comprising a second resistor in series with another stage contained in said high pass filter.
- 7. The device of claim 3, further comprising an equalizer disposed between said high pass filter and said low pass filter, said equalizer compensating for the different attenuations to which different frequency signal components of said ADSL signal are subjected to when transmitted on a local loop.
  - 8. The device of claim 1, wherein said filter is implemented as an analog filter.

Page 19 of 23

Docket No.: TI-31194/TXN-0001

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line:

- 9. The device of claim 8, wherein said analog filter is implemented using active components.
- 1 10. The device of claim 8, wherein said analog filter is implemented using passive 2 components.
  - 11. The invention of claim 1, wherein said device comprises a modem or a customer premises equipment (CPE).
    - 12. The device of claim 2, wherein said filter is implemented as a monolithic integrated circuit.
    - shared by a customer premise equipment (CPE) operating according to a digital subscriber line (DSL) standard, said telephone line being shared by other devices used for home networking, said filter comprising:
- a high/pass filter filtering any DSL transmission echos received on said telephone line, said high pass filter further filtering any voice communications also received on said telephone
- 8 an amplifier amplifying the output of said high pass filter; and
- 9 a low pass filter attenuating the signal components corresponding to said home 10 networking to a level less than a desired noise floor.

Patent Page 20 of 23

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- 1 14. The filter of claim 13, wherein said high pass filter further attenuates high frequency 2 components including said signal components corresponding to said home networking, wherein 3 the attenuations of said high frequency components enables said amplifier to be implemented 4 with a higher gain.
  - 15. The filter of claim 14, wherein said DSL comprises Asymmetric DSL (ADSL), and said home networking is performed according to home phone networking alliance (HPNA) standard, wherein said desired noise floor equals -150 dBM/Hz.
  - 16. The filter of claim 14 wherein said high pass filter comprises a first resistor in series with an input capacitance, wherein said first resistor has a resistance substantially more than the internal resistance of said input capacitance, wherein said first resistor causes said attenuations of said high frequency components.
  - 17. The filter of claim 16, further comprising a second resistor in series with another stage contained in said high pass filter.
- 1 18. The filter of claim 13, wherein said high pass filter, said amplifier and said low pass 2 filter are implemented in a monolithic integrated circuit.

Docket No.: TI-31194/TXN-0001

19. A device for accurately generating a plurality of samples representing data encoded 1 2 according to a digital subscriber line (DSL) specification, said data being encoded in a DSL signal and being received on a telephone line, said telephone line being shared by other devices 3 used for home networking, said device comprising: 4 5 filtering means for attenuating signal components corresponding to said home networking 6 to generate a filtered output, said signal components being received on an input signal, said input signal further containing a component according to said DSL specification, said filtered output containing said component according to said DSL specification; amplifier means for amplifying said filtered output to generate an amplified signal; and converter means for generating said plurality of samples by sampling said amplified signal.